PART I.] [NOVEMBER 1920.

LAND AND FRESHWATER MOLLUSCA

OF

INDIA,

INCLUDING

SOUTH ARABIA, BALUCHISTAN, AFGHANISTAN, KASHMIR, NEPAL, BURMAH, PEGU, TENASSERIM, MALAY PENINSULA, CEYLON, AND OTHER ISLANDS OF THE INDIAN OCEAN.

SUPPLEMENTARY TO MESSRS. THEOBALD AND HANLEY'S

CONCHOLOGIA INDICA.

BY

LIEUT.-COLONEL H. H. GODWIN-AUSTEN, F.R.S., F.R.G.S., F.Z.S., &c.,

LATE DEPUTY SUPERINTENDENT TOPOGRAPHICAL SURVEY OF INDIA, IN CHARGE OF THE KHASI, GARO, AND NAGA-HILLS SURVEY PARTY.

VOL. III.

PLATES.

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1920.

TAYLOR AND FRANCIS, PRINTERS,] [RED LION COURT, FLEET STREET.

Plate CLIX.

J S Gladstone, Photo.

GLESSULA.

Watford Engraving Coy. Collotype.

PLATE CLIX.

[Part I.—*November* 1920.]

Fig. 1.	GLESSULA (RISHETIA) LONGISPIRA, n. sp.	Rishettchu, Sikhim.	× 1·25.
2.	—— (——) ——, n. sp.	Raslichu, Sikhim.	× 1·50.
3.	—— (——) TENUISPIRA, Bs.	Teria Ghat, Khasi.	× ,,
4.	—— (——) SUBACULINA, n. sp.	Khasi Hills.	× ,,
5.	—— (——) HARMUTTIENSIS, n. sp.	Dafla Hills.	× ,,
6.	—— (——) RISSOMENSIS, n. sp.	Damsang, Sikhim.	× ,,
7.	—— (——) BACULINA, H. Blf. (Type).	Darjiling.	× 1·5.
8.	—— (——) CANARAENSE, n. sp.?	N. Canara.	× 1·25.
9.	—— (——) SUBACULINA, n. sp.	North Khasi.	× 1·50.
10.	—— (——) MUNIPURENSE, n. sp.	Munipur.	× ,,
11.	—— (——) GAROENSE, n. sp., small var.	Naraindhur, Cachar.	× ,,
12.	—— (——) STRAMENCOLOR, n. sp.	Naga Hills.	× ,,
13.	—— (——) BACULINA, H. Blf., var. EXILIS.	Damsang, Sikhim.	× ,,
14.	—— (——) ——, ,, ,, (Type).	Rissom Peak, Sikhim.	× ,,
15.	—— (——) GAROENSE, n. sp. (Type).	Garo Hills.	× ,,

J. S. Gladstone, Photo.

Watford Engraving Coy. Collotype.

GLESSULA.

PLATE CLX.

[Part I.—*November* 1920.]

Fig. 1.	GLESSULA (RISHETIA) BURRAILENSIS, G.-A. (Type).	Khunho Pk., Naga Hills.	×	1·25.
2.	—— (——) ——.	,, ,,	×	,,
3.	—— (——) ——.	Japvo Pk., ,,	×	,,
4.	—— (——) ——.	Kopamedza Pk., ,,	×	,,
5.	—— (——) MAXWELLI, n. sp. (1st Type).	Naga Hills.	×	,,
6.	—— (——) ——. (2nd Type).	,,	×	,,
7.	—— (——) DIKRANGENSE, n. sp.	Dafla Hills.	×	1·50.
7*a*.	—— (——) ——.	,,	×	,,
8.	—— OCHRACEA, n. sp.	Sikhim.	×	,,
9.	—— BUTLERI, G.-A.	Naga Hills.	×	,,
10.	—— MAIAMENSIS, n. sp. (Type).	Patkai Range.	×	,,
11.	—— ——, n. sp. (Type).	Singpho Hills.	×	,,
12.	—— ILLUSTRIS, G.-A. (Type).	Hengdan Peak, Naga.	×	,,
13.	—— ——, var. TUMIDA, G.-A.	Jaintia.	×	,,
14.	—— CRASSILABRIS, Bs.	N. Khasi.	×	2.
15.	—— OAKESI, n. sp.	Abor Hills.	×	1·50.
16.	—— ——.	Bramakund, E. Assam.	×	,,
17.	—— CRASSILABRIS, Bs. (Typical).	Teria Ghat, Khasi.	×	2.
18.	—— ——.	Jaintia Hills.	×	,,
19.	—— ——.	Shengork Peak, Dafla Hills.	×	,,
20.	—— ——.	Garo Hills.	×	,,
21.	—— RABANI, n. sp.	Chittagong.	×	,,
22.	—— (JADUKAMIA) ABNORMIS, n. sp.	Khasi Hills.	×	3.
23.	—— (——) ——.	Dafla Hills.	×	,,
24.	—— PYRAMIS, Bs.	Teria Ghat, Khasi.	×	1·50.

J S Gladstone Photo.

GLESSULA.

Watford Engraving Coy. Collotype.

PLATE CLXI.

[Part I.—*November* 1920.]

Fig. 1.	GLESSULA (RISHETIA) PERTENUIS, W. Blf.	Pegu.	× 1·5.
2.	—— (——) ——.	Henzada, Pegu.	× ,,
3.	—— (——) BASSEINENSIS, n. sp.	Bassein, ,,	× ,,
4.	—— (——) PERTENUIS, W. Blf., large var.	Thyetmyo.	× ,,
5.	—— (——) LIMBORGI, n. sp.	Tenasserim.	× ,,
6.	—— (——) SUBHEBES, n. sp. (Type).	Dafla Hills.	× 2.
7.	—— (——) ——.	Naga.	× 1·5.
8.	—— (——) ——.	Assam.	× ,,
9.	—— (——) ——.	Kohliagur, near Tezpur, Assam.	× ,,
10.	—— (——) SARISSA, Bs.	Lower Bengal.	× 2.
11.	—— (——) NEVILLIANA, n. sp.	Dafla Hills.	× ,,
12.	—— (——) ——.	,, ,,	× ,,
13.	—— (——) ——.	,, ,,	× 2·5.
14.	—— (——) MASTERSI, n. sp.	,, ,,	× 2.
15.	—— (——) FORUM, n. sp.	Chittagong.	× 1·5.
16.	—— (——) HASTULA, Bs.	Darjiling.	× 2.
17.	—— (——) —— (Typical).	,,	× ,,
18.	—— (——) SUBHASTULA, n. sp. (Type).	North Khasi.	× ,,
19.	—— (——) ——, var. (Type).	,, ,,	× ,,
20.	—— (——) ——, ,, ,,	Munipur.	× ,,
21.	—— (——) SHIROIENSIS, n. sp.	,,	× ,,
22.	—— (——), n. sp.	,,	× ,,
23.	—— (——) LAHUPAENSIS, n. sp.	,,	× ,,
24.	—— (——) KOHIMAENSIS, n. sp.	Naga Hills.	× ,,
25.	—— (——) LHOTAENSIS, n. sp.	Lhota, Naga Hills.	× ,,
26.	—— (sub-genus ?) GEMMA, Bo.	Khoostia, Bengal.	× ,,
27.	—— (sub-genus ?) ,,	Bengal (authentic).	× ,,
28.	—— (sub-genus ?) ,,	Chandanagur.	× ,,
29.	—— (sub-genus ?) ,, var.	Chittagong.	× ,,

Plate CLXII.

J. S. Gladstone. Photo.

GLESSULA.

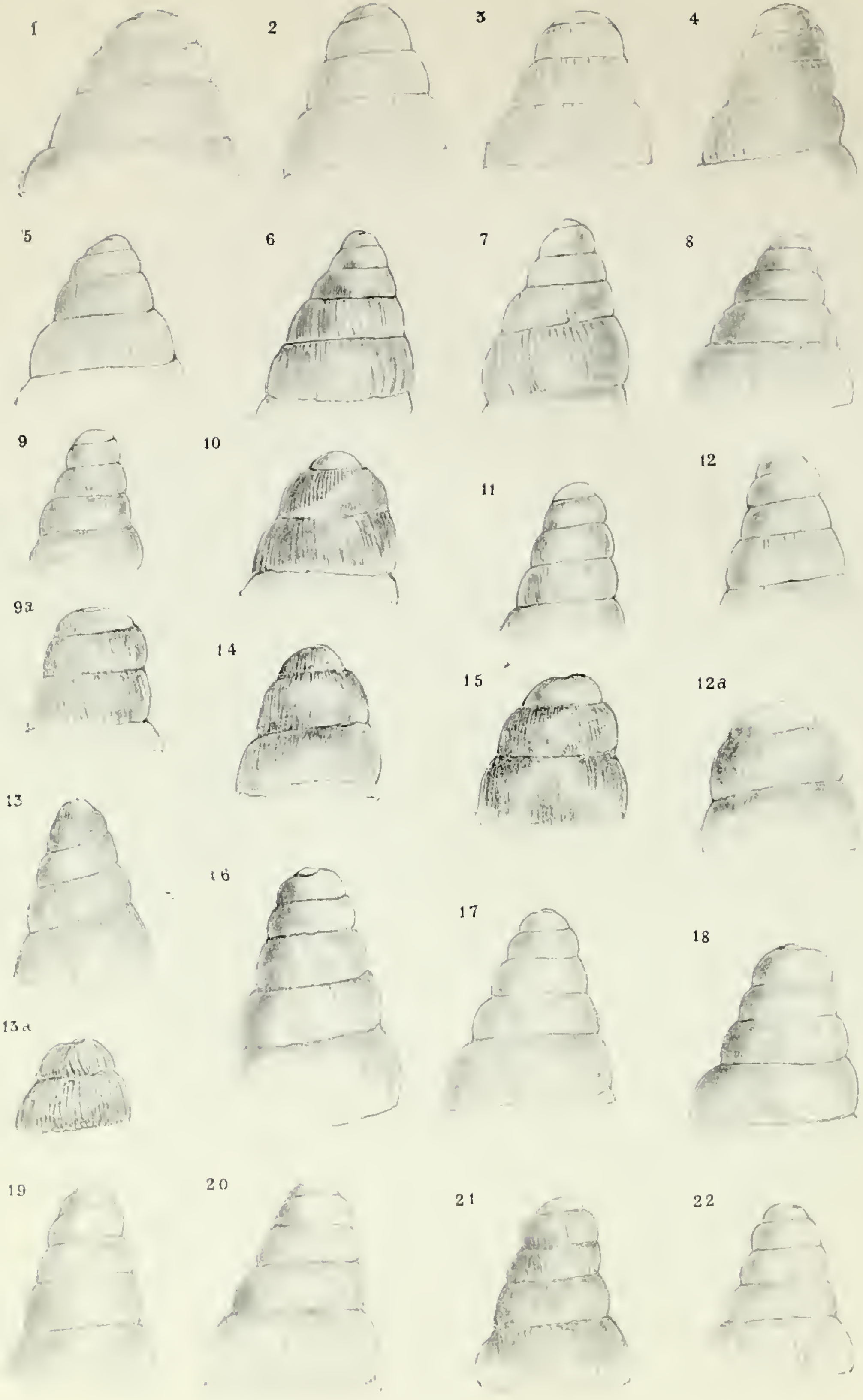
Watford Engraving Coy. Collotype

PLATE CLXII.

[Part I.—*November* 1920.]

Fig.	1.	Glessula (Rishetia) mastersi, n. sp. (Type).	Assam.	× 1·50.
	2.	—— (——) subhebes, G.-A. (var. tumida).	Golaghat, Naga.	× ,,
	3.	—— (——) ——, ,,	Naga.	× ,,
	4.	—— (——) aborensis, G.-A.	Abor Hills.	× ,,
	5.	—— orobia, Bs.	Darjiling.	× 2.
	6.	—— —— (Type).	,,	× ,,
	7.	—— —— (var. major).	Richila Pk., Sikhim.	× 1·5.
	8.	—— solida, n. sp.	North Khasi.	× 2.
	9.	—— crassula, Bs., var.	Sikhim.	× ,,
	10.	—— oglei, n. sp.	Naga Hills.	× 1·50.
	11.	—— ——.	,, ,,	× ,,
	12.	—— barakensis, n. sp.	Munipur (Type).	× ,,
	13.	—— prowiensis, n. sp.	,, ,,	× 1·50.
	14.	—— feddeni, n. sp., var.	Shan States.	× 1·50.
	15.	—— ——, ,,	,, ,,	× ,,
	16.	—— hanleyi, n. sp.	North Khasi.	× 2.
	17.	—— barakensis, n. sp.	Naga.	× ,,
	18.	—— yuangensis, n. sp.	Shan States.	× ·15.
	19.	—— woodthorpei, n. sp.	,, ,,	× ,,
	20.	—— peguensis, W. Blf.	Thyetmyo, Pegu.	× 2.
	21.	—— ——.	,, ,,	× ,,
	22.	—— crassilabris, Bs. (var. nana).	North Khasi.	× 2.
	23.	—— rarhiensis, n. sp.	Sikhim.	× 1·5.
	24.	—— imphalensis, n. sp.	Munipur.	× ,,
	25.	—— crassula, Rve. (Type).	Darjiling.	× 2.
	26.	—— hebitata, n. sp.	Munipur.	× 1·5.

Plate CLXIII.



GLESSULA.

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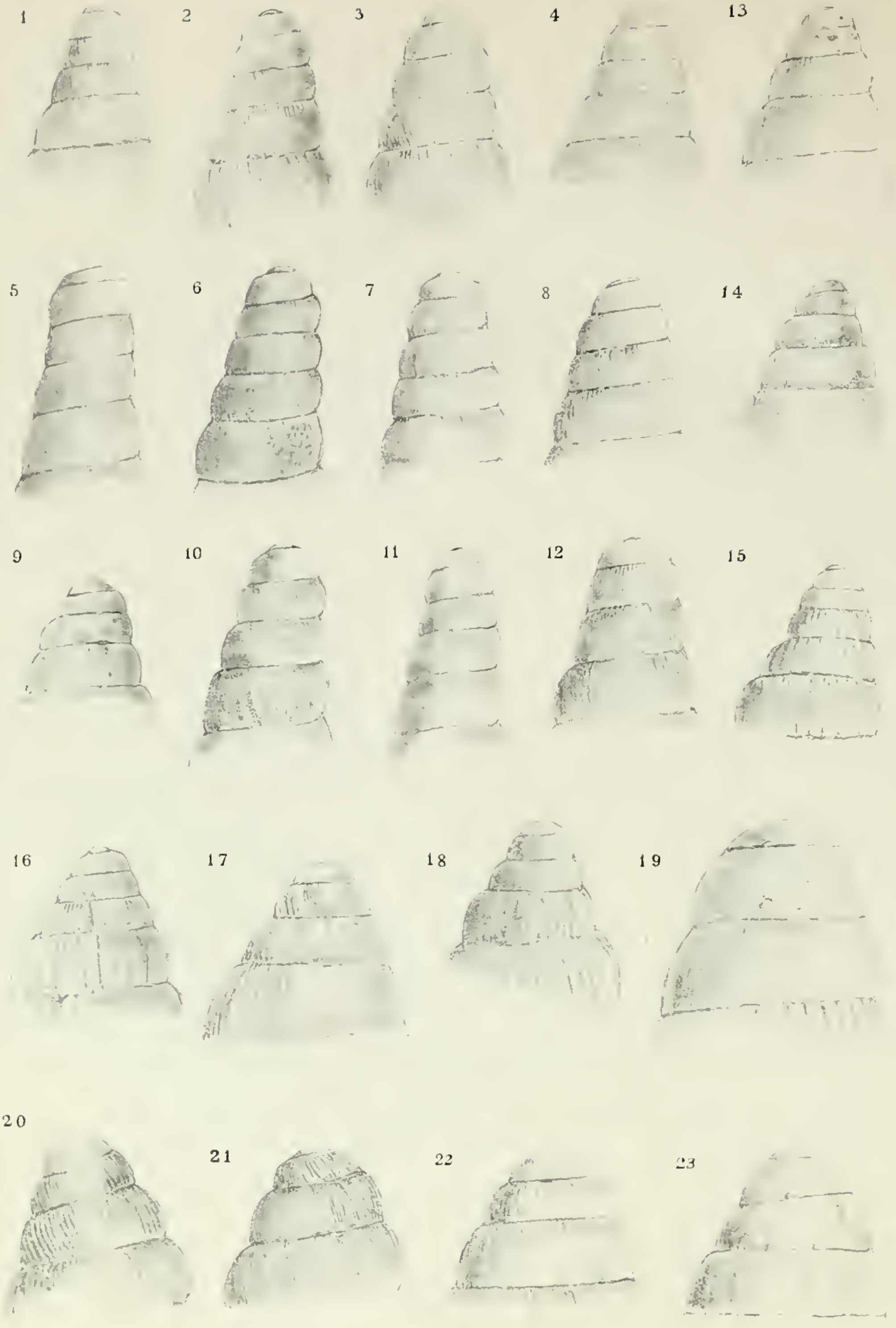
PLATE CLXIII.

[Part I.—*November* 1920.]

[Enlargements of original Drawings.]

Fig. 1.	GLESSULA BOTELLUS, Bs.	Nilghiris.	× 12·5.
2.	—— OAKESI, G.-A. (Type).	Abor Hills.	× ,,
3.	—— BOTELLUS, Bs., of Preston.	,, ,,	× ,,
4.	—— PROWIENSIS, n. sp. (OROBIA, Beddome).	Naga Hills.	× ,,
5.	—— SUBJERDONI, Bedd. (var. MINOR, SUBJERDONI of Nevill).	Jeypur.	× ,,
6.	—— ——.	Tinnevelly Hills.	× ,,
7.	—— ——.	Golconda.	× ,,
8.	—— OROBIA, Bs.	Darjiling.	× ,,
9.	—— (RISHETIA) HASTULA, Bs.	,,	× ,,
9*a*.	—— (——) —— (apex more enlarged).	,,	× 24.
10.	—— (——) ROBERTI, n. sp.	Richila, Sikhim.	× ,,
11.	—— (——) SUBHASTULA, n. sp.	North Khasi.	× 12·5.
12.	—— (——) —— (var.).	North Cachar.	× ,,
12*a*.	—— (——) ——.	,, ,,	× 24.
13.	—— (——) SUBHASTULA, var.	Munipur.	× 12·5.
13*a*.	—— (——) ——.	,,	× 24.
14.	—— SUBHASTULA, n. sp.	Cherra Poonjee, Khasi.	× ,,
15.	—— —— (Type).	North Khasi.	× 24.
16.	—— (RISHETIA) SARISSA, Bs. (var.).	Burroi Gorge, Dafla.	× 12·5.
17.	—— (——) —— (var.).	Gowhathi.	× ,,
18.	—— (——) —— (Typical).	Jessore.	× ,,
19.	—— (——) —— (var.).	Koliaghur, Tezpur, Assam.	× ,,
20.	—— (——) MASTERSI, n. sp. (Type).	Golaghat, Assam.	× ,,
21.	—— (——) —— (var.).	Angaolno Peak, Naga.	× ,,
22.	—— (——) ——.	Golaghat, Assam.	× ,,

Plate CLXIV.



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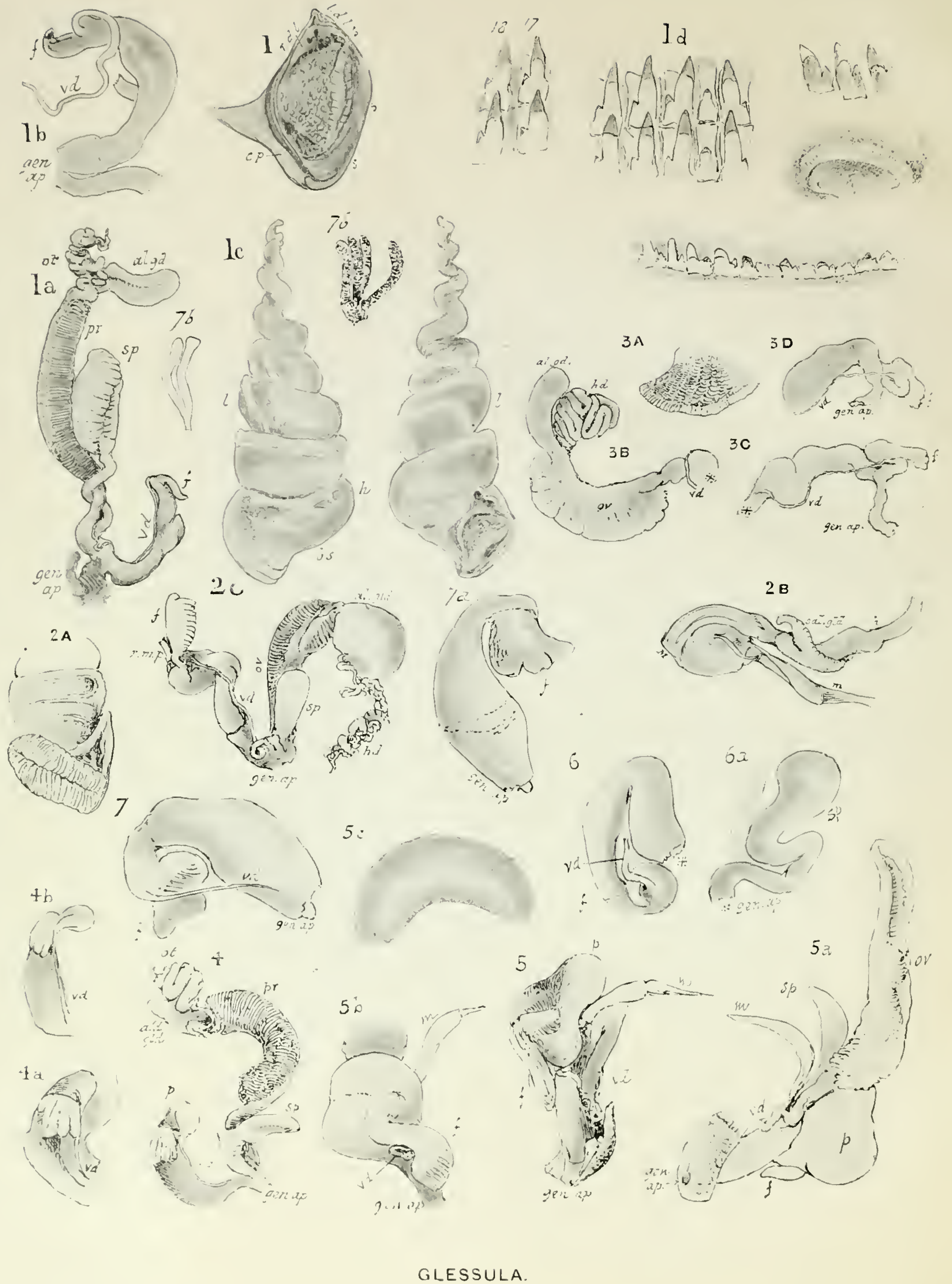
GLESSULA.

PLATE CLXIV.

[Part I.—*November* 1920.]

(Original drawings all × 12·5 and reduced $\frac{1}{4}$.)

Fig. 1.	GLESSULA SUBHEBES (Type).	Dafla Hills.
2.	—— ——.	Abor Hills.
3.	—— AUSTENIANA, Nevill (Type).	Dafla.
4.	—— (RISHETIA) DIHINGENSIS, n. sp.	Sonari Tea Garden, Assam.
5.	—— (——) GAROENSE, n. sp. (Type).	Garo Hills.
6.	—— (——) —— (small var.).	Cachar.
7.	—— (——) MACERA, W. Blf. MS. (Type).	Assam.
8.	—— —— MUNIPURENSIS (Type).	Munipur.
9.	—— PROWIENSIS.	Naga Hills.
10.	—— (RISHETIA) PERTENUIS (large var.).	Thyetmyo, Pegu.
11.	—— (——) ——.	Pegu.
12.	—— (——) BASSEINENSIS, n. sp.	Bassein, Pegu.
13.	—— CRASSULA (large var.).	Darjiling.
14.	—— —— (Typical).	,,
15.	—— —— (var. with incised lines).	Rarhichu, Sikhim.
16.	—— CRASSILABRIS, Bs.	Teria Ghat, Khasi.
17.	—— ——.	Dafla Hills.
18.	—— —— (small var.).	Naga Hills.
19.	—— PONSIENSIS, n. sp. PYRAMIS (var. MAJOR), Nevill.	Ponsee, Yunnan.
20.	—— BLANFORDIANA (Type), × 12.	,, ,,
21.	—— ——, × 12.	Bamao, Burma.
22.	—— PEGUENSIS, W. Blf.	Arakan.
23.	—— PYRAMIS, Bs.	Teria Ghat.



GLESSULA.

H. H. Godwin-Austen, del.

Watford Engraving Coy., Sculp.

PLATE CLXV.

[Part I.—*November* 1920.]

GLESSULA (RISHETIA) LONGISPIRA, n. sp. Risetchu, Sikhim.

Fig. 1. Aperture, with foot protruding, × 8.

[*rdl-ldl*, right and left dorsal lobes. *cp*, fleshy columellar pillar upon and around which the columellar margin is built. *s*, peristome.]

1 *a*. Generative organs, × 4·5.

1 *b*. Penis of 2nd specimen examined.

1 *c*. The visceral sac, showing coils, back and front views.

GLESSULA OCHRACEA, G.-A. Sikhim.

2 A. Aperture with foot protruding, showing sole of foot, × 4.

2 B. Buccal mass, with intestine and salivary glands, × 8.

2 C. Genitalia nearly complete, × 4·5.

GLESSULA OAKESI, G.-A. Abor Hills.

3 A. Side of foot, × 6.

3 B. Albumen gland, hermaphrodite duct, and oviduct to vas deferens, × 6.

3 C. Vas deferens to penis, × 6.

3 D. ,, ,, another view, × 6.

GLESSULA OROBIA, Bs.

4. Generative organs, × 8.

4 *a*. Penis, with flagellum, × 12.

4 *b*. ,, another view, × 8.

GLESSULA INORNATA, Pfr.

5. Part of genitalia, × 4·5.

5 *a*. ,, ,, another view, × 4·5.

5 *b*. Penis, coiled view of, × 4·5.

5 *c*. Jaw, × 24.

GLESSULA GAROENSE, n. sp. Silchar, Cachar.

6. Penis, with simple flagellum, × 12.

6 *a*. Spermatheca, × 12.

GLESSULA species? Buddula, Ceylon.

7. Penis, to show flagellum, × 8.

7 *a*. ,, view of other side, × 8.

7 *b*. Follicles of the prostate, × 24.